

**AMENDMENTS TO THE CLAIMS:**

**Please amend the claims as follows and add new claims 9-24:**

1. (Currently Amended) An ink jet head, comprising:
  - a chamber plate having comprising a plurality of pressuring pressurizing chambers formed therein for storing an ink;
  - a vibrating plate bonded to the chamber plate;
  - a housing having an ink flow path through which an ink is supplied into the pressuring pressurizing chambers;
  - an orifice through which an ink is ejected from the pressuring chambers; and
  - a longitudinal vibration mode piezoelectric element for generating pressure under which an ink droplet is ejected through the orifice; orifice, the longitudinal vibration mode piezoelectric element being connected to a structure other than the chamber plate, wherein a thickness of the vibration vibrating plate is from 5  $\mu\text{m}$  to 10  $\mu\text{m}$ .
  
2. (Currently Amended) The ink jet head as claimed in claim 1,  
An ink jet head comprising:
  - a chamber plate comprising a plurality of pressuring chambers formed therein for storing an ink;
  - a vibrating plate bonded to the chamber plate;
  - a housing having an ink flow path through which an ink is supplied into the pressuring chambers;
  - an orifice through which an ink is ejected from the pressuring chambers; and
  - a longitudinal vibration mode piezoelectric element for generating pressure under which an ink droplet is ejected through the orifice,

wherein a thickness of the vibrating plate is from 5  $\mu\text{m}$  to 10  $\mu\text{m}$ , and  
wherein a the ratio of the thickness of the vibration vibrating plate to the a width of  
the pressurizing chamber is 0.03 or less.

3. (Currently Amended) The ink jet head as claimed in claim 1, wherein the ~~vibration~~  
vibrating plate ~~comprises~~ is formed by a metal.

4. (Currently Amended) The ink jet head as claimed in claim 1, wherein a solution  
having a viscosity of from 5 mPa·s to 25 mPa·s is ejected.

5. (Currently Amended) An ink jet type droplet ejection device, comprising:  
an ink jet head;  
an ejection substrate disposed opposed to the ink jet head; and  
a mechanism for moving one of the ink jet head and the ejection substrate with  
respect to the ~~other;~~ other,

wherein the ink jet head comprises: comprising  
a chamber plate having comprising a plurality of pressuring pressurizing  
chambers formed therein for storing an ink, ink;

a vibrating plate having a thickness of from 5  $\mu\text{m}$  to 10  $\mu\text{m}$  bonded to the  
chamber plate, plate;

a housing having an ink flow path through which an ink is supplied into the  
pressuring pressurizing chambers, chambers;

an orifice through which an ink is ejected from the pressuring pressurizing  
chambers chambers; and

a longitudinal vibration mode piezoelectric element for generating pressure

under which an ink droplet is ejected through the orifice, the longitudinal vibration mode piezoelectric element being connected to a structure other than the chamber plate.

6. (Currently Amended) The ink jet head type droplet ejection device as claimed in claim 5, An ink jet type droplet ejection device, comprising:

an ink jet head;

an ejection substrate disposed opposed to the ink jet head; and

a mechanism for moving one of the ink jet head and the ejection substrate with respect to the other,

wherein the ink jet head comprises:

a chamber plate comprising a plurality of pressuring chambers formed therein for storing an ink;

a vibrating plate having a thickness of from 5  $\mu\text{m}$  to 10  $\mu\text{m}$  bonded to the chamber plate;

a housing having an ink flow path through which an ink is supplied into the pressuring chambers;

an orifice through which an ink is ejected from the pressuring chambers; and  
a longitudinal vibration mode piezoelectric element for generating pressure under which an ink droplet is ejected through the orifice,

wherein a the ratio of the thickness of the vibration vibrating plate to the a width of the pressurizing chamber is 0.03 or less.

7. (Currently Amended) The ink jet head type droplet ejection device as claimed in claim 5, wherein the vibration vibrating plate comprises is formed by a metal.

8. (Currently Amended) The ink jet head type droplet ejection device as claimed in claim 5, wherein a solution having a viscosity of from 5 mPa·s to 25 mPa·s is ejected.

9. (New) The ink jet head as claimed in claim 1, wherein the longitudinal vibration mode piezoelectric element expands or contracts when a potential difference is applied to the piezoelectric element.

10. (New) The ink jet head as claimed in claim 1, further comprising:  
a plurality of longitudinal vibration mode piezoelectric elements.

11. (New) The ink jet head as claimed in claim 10, wherein the longitudinal vibration mode piezoelectric elements are disposed at an equal interval.

12. (New) The ink jet head as claimed in claim 10, further comprising:  
a piezoelectric element fixing member for connecting the longitudinal vibration mode piezoelectric elements to each other.

13. (New) The ink jet head as claimed in claim 1, further comprising:  
signal input terminals disposed on opposing sides of the longitudinal vibration mode piezoelectric element to provide a voltage to the longitudinal vibration mode piezoelectric element.

14. (New) The ink jet head as claimed in claim 1, further comprising:  
an elastic adhesive disposed between the longitudinal vibration mode piezoelectric element and the vibrating plate.

15. (New) The ink jet head type droplet ejection device as claimed in claim 5, further comprising:

a plurality of longitudinal vibration mode piezoelectric elements.

16. (New) The ink jet head type droplet ejection device as claimed in claim 15, further comprising:

a piezoelectric element fixing member for connecting the longitudinal vibration mode piezoelectric elements to each other.

17. (New) The ink jet head as claimed in claim 1, wherein a thickness of the vibrating plate is from 7  $\mu\text{m}$  to 10  $\mu\text{m}$ .

18. (New) The ink jet head type droplet ejection device as claimed in claim 5, wherein a thickness of the vibrating plate is from 7  $\mu\text{m}$  to 10  $\mu\text{m}$ .

19. (New) An ink jet head comprising:

a chamber plate comprising at least one pressuring chamber formed therein for storing an ink;

a vibrating plate positioned on the chamber plate;

an orifice through which an ink is ejected from the pressuring chamber; and

a longitudinal vibration mode piezoelectric element for generating pressure under which an ink droplet is ejected through the orifice.

20. (New) The ink jet head as claimed in claim 19, further comprising:

a plurality of longitudinal vibration mode piezoelectric elements.

21. (New) The ink jet head as claimed in claim 20, further comprising:  
a piezoelectric element fixing member for connecting the longitudinal vibration mode piezoelectric elements.
22. (New) The ink jet head as claimed in claim 20, wherein a thickness of the vibrating plate is from 7  $\mu\text{m}$  to 10  $\mu\text{m}$ .
23. (New) An ink jet head, comprising:  
a chamber plate comprising at least one pressurizing chamber formed therein for storing an ink;  
a vibrating plate positioned on the chamber plate;  
an orifice through which an ink is ejected from the pressurizing chambers; and  
a piezoelectric element for generating pressure under which an ink droplet is ejected through the orifice,  
wherein a ratio of the thickness of the vibrating plate to a width of the pressurizing chamber is not greater than 0.03.
24. (New) The ink jet head as claimed in claim 23, wherein said piezoelectric element comprises a longitudinal vibration mode piezoelectric element.